

**Issue Resolution and Scope  
Clarification in Web Systems  
Development: A Qualitative Study**

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**Doctor of Philosophy**

**2009**

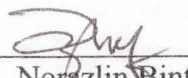
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\_\_\_\_\_  
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## Acknowledgements

First and foremost, I would like to extend my gratitude to my principal supervisor, Professor Didar Zowghi and my co-supervisor Professor David Lowe. This research would not be possible without their guidance, time and commitment. I truly appreciate their understanding, patience and mostly importantly believing in my abilities to complete this journey.

My sincere thanks also to Dr Nurmuliani, Dr Chad Coulin, Dr Samiaji Sarosa, Dr Mahmood Niazi, Zafar Mehboob, Ruhaya Abdul Aziz, Abdul Babar and Dewi Mirza of the Requirements Engineering research group at UTS. Their constant encouragements and constructive comments made me see the light at the end of the tunnel.

I am eternally grateful to my family especially my mother, Hajah Salmah Ma'arop for always reminding me to move forward and believe in everything I set to achieve. To my late father, Haji Yusop Jalil, I hope I made you proud and I am happy that I have so far accomplished what you hoped to see. I dedicate this thesis to both my parents. To my sisters, Hajah Norizan Yusop, Hajah Norhaiyati Yusop, my brother Zulkifli Yusop, my brother-in-law Haji Mohamad Idris and my sister-in-law Zaleha Karman, your journey in life are truly inspiring and thank you for your motivation. To my niece Nurfarhana, thank you for being there for me and to all my other nieces and nephews: Alia, Akid, Iskandar, Ekar, Amira, Amalia, Amirul, Haziq and Syahmi, I hope my work here will inspire all of you to excel further. The sky is the limit!

This thesis would not be possible also without the ongoing and tireless support from my dearest friends Norashikin Salim, Nurulhuda Tajularus, Emmie Sahlan and Lizveth Robles. Thank you for your strength, kindness and motivation throughout these years. My heartfelt appreciation also goes to Karen Jeffs, Maisie Lam, Daryl Chan, Tonia Murphy and Melissa Yap for the support they have sincerely displayed while I juggled my work and academic commitments. Along the way, they have showed me the possibility of bridging the gap between academia and industry and made me realise the value of theoretical framework in guiding me towards the smooth operation of my practical work assignments. Finally, I would like to extend my gratitude to all the research participants that have given their valuable time to participate in this research.



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# Abstract

In Web systems development, the business environment and business processes underpin the identification of system needs, and these environment and processes are also in turn fundamentally changed by the introduction and evolution of Web systems. The web systems can be volatile as they comprise a complex set of inter-dependencies with various business and system domain characteristics. Web systems fall into the class of applications where the scope of the system under development cannot be clearly defined in the early stages of project.

This thesis presents a qualitative study of Web systems development processes by first conducting an investigation of these inter-dependencies and in particular the impacts that a Web system can have on its environment. From the identification of these inter-dependencies and their impacts, it was found that a key mechanism in supporting Web systems development is the identification and subsequent resolution of “issues”. An issue is defined as a problem or a concern that Web developers face that can directly impact on cost, schedule and scope. The resolution of these issues plays a crucial role in supporting the clarification of system scope throughout development. This thesis further describes a comprehensive investigation of issue resolution processes as well as presents a taxonomy of issues and a novel issue resolution process model. This phenomenon is explored by qualitatively analysing issue handling and resolution data from industry practitioners.

Findings suggest that both tacit and explicit knowledge play an important role in resolving issues and that the capturing and sharing of knowledge is a challenging task. The research further investigates the role of knowledge and knowledge transformation in issue resolution processes. The initial issue resolution process model was validated by conducting in-depth interviews with industry practitioners that resulted in revising the process model based on the state of the practice. The findings presented in this thesis provide valuable empirical results about the challenges of the current practices in Web systems development.